

The Journal of

Membrane Biology

An international journal

**for studies on the structure, function and genesis
of biomembranes**

Volume 115 1990

Editorial Board

W.R. Loewenstein, Miami, Editor-in-Chief

Q. Al-Awqati, Columbia

G. Blobel, Rockefeller

D. Branton, Harvard

P. Cuatrecasas, Warner Lambert

J.M. Diamond, California, L.A.

D. Engelman, Yale

S. Fleischer, Vanderbilt

J.G. Forte, California, Berkeley

G. Guidotti, Harvard

J. Handler, Johns Hopkins

A. Helenius, Yale

L. Heppel, Cornell

W.L. Hubbell, California, L.A.

R.B. Kelly, California, S.F.

A. Klug, Cambridge

P. Läuger, Konstanz

S.E. Luria, MIT

E.A.C. MacRobbie, Cambridge

D.J. Fritts, Assistant to the Editor

V.T. Marchesi, Yale

H.M. McConnell, Stanford

S. McLaughlin, SUNY, Stony Brook

C. Miller, Brandeis

H. Murer, Zurich

G.E. Palade, Yale

E. Racker, Cornell

H. Reuter, Bern

B. Sakmann, Max-Planck, Heidelberg

R.W. Schekman, California, Berkeley

S.G. Schultz, Texas

S.J. Singer, California, S.D.

C.L. Slayman, Yale

K.R. Spring, N.I.H.

C.F. Stevens, Salk Institute

W. Stoeckenius, California, S.F.

D. Urry, Alabama

H.H. Ussing, Copenhagen



Springer International

The exclusive copyright for all languages and countries, including the right for photomechanical and any other reproductions, also in microform, is transferred to the publisher

The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Printed in West Germany

© 1990 by Springer-Verlag New York Inc.

Springer International



Author Index

- Ackerson, L.C., *see* Moronne, M.M., et al. 31
- Amberger, E., *see* Preston, R.R., et al. 61
- Andjus, P.R., Vučelić, D.: D₂O-Induced Cell Excitation 123
- Argent, B.E., *see* Gray, M.A., et al. 203
- Armant, D.R., *see* Toner, M., et al. 261
- Bar-Noy, S., Cabantchik, Z.I.: Transport Domain of the Erythrocyte Anion Exchange Protein 217
- Baum, B.J., *see* He, X., et al. 159
- Beilby, M.J., *see* McCulloch, S.R., et al. 129
- Böller, K., *see* El Aoumari, A., et al. 229
- Briand, J.-P., *see* El Aoumari, A., et al. 229
- Buckley, J.T., *see* Wilmsen, H.U., et al. 71
- Buller, A.L., White, M.M.: Altered Patterns of N-Linked Glycosylation of the *Torpedo* Acetylcholine Receptor Expressed in *Xenopus* Oocytes 179
- Cabantchik, Z.I., *see* Bar-Noy, S. 217
- Cravalho, E.G., *see* Toner, M., et al. 261
- Dupont, E., *see* El Aoumari, A., et al. 229
- Durbec, P., *see* El Aoumari, A., et al. 229
- Eisenberg, R.S.: Channels as Enzymes (*topical review*) 1
- El Aoumari, A., Fromaget, C., Dupont, E., Reggio, H., Durbec, P., Briand, J.-P., Böller, K., Kreitman, B., Gros, D.: Conservation of a Cytoplasmic Carboxy-Terminal Domain of Connexin 43, a Gap Junctional Protein, in Mammal Heart and Brain 229
- Fromaget, C., *see* El Aoumari, A., et al. 229
- Garton, A.J., *see* Gray, M.A., et al. 203
- Geering, K.: Subunit Assembly and Functional Maturation of Na,K-ATPase (*topical review*) 109
- Gick, G.G., Melikian, J., Ismail-Beigi, F.: Thyroidal Enhancement of Rat Myocardial Na,K-ATPase: Preferential Expression of $\alpha 2$ Activity and mRNA Abundance 273
- Gray, M.A., Greenwell, J.R., Garton, A.J., Argent, B.E.: Regulation of Maxi-K⁺ Channels on Pancreatic Duct Cells by Cyclic AMP-Dependent Phosphorylation 203
- Greenwell, J.R., *see* Gray, M.A., et al. 203
- Gros, D., *see* El Aoumari, A., et al. 229
- Gutknecht, J.: Salicylates and Proton Transport through Lipid Bilayer Membranes: A Model for Salicylate-Induced Uncoupling and Swelling in Mitochondria 253
- He, X., Wu, X., Turner, R.J., Baum, B.J.: Evidence for Two Modes of Ca²⁺ Entry Following Muscarinic Stimulation of a Human Salivary Epithelial Cell Line 159
- Holmberg, S.R.M., *see* Williams, A.J. 167
- Horowicz, P., *see* Kotsias, B.A. 95
- Ismail-Beigi, F., *see* Gick, G.G., et al. 273
- Jackson, R.C., Modern, P.A.: Reassociation of Cortical Secretory Vesicles with Sea Urchin Egg Plasma Membrane: Assessment of Binding Specificity 83
- Jacobs, R.E., *see* White, S.H. 145
- Kotsias, B.A., Horowicz, P.: Nitrate and Chloride Ions Have Different Permeation Pathways in Skeletal Muscle Fibers of *Rana pipiens* 95
- Kreitman, B., *see* El Aoumari, A., et al. 229
- Kung, C., *see* Preston, R.R., et al. 41, 51, 61
- Macey, R.I., *see* Moronne, M.M., et al. 31
- McCulloch, S.R., Beilby, M.J., Walker, N.A.: Transport of Potassium in *Chara australis*: II. Kinetics of a Symport with Sodium 129
- Mehlhorn, R.J., *see* Moronne, M.M., et al. 31
- Meiri, H., *see* Omri, G. 13
- Melikian, J., *see* Gick, G.G., et al. 273
- Miller, M.P., *see* Moronne, M.M., et al. 31
- Modern, P.A., *see* Jackson, R.C. 83
- Moronne, M.M., Mehlhorn, R.J., Miller, M.P., Ackerson, L.C., Macey, R.I.: ESR Measurement of Time-Dependent and Equilibrium Volumes in Red Cells 31
- Naruse, K., *see* Nomura, K., et al. 241
- Nomura, K., Naruse, K., Watanabe, K., Sokabe, M.: Aminoglycoside Blockade of Ca²⁺-Activated K⁺ Channel from Rat Brain Synaptosomal Membranes Incorporated into Planar Bilayers 241
- Omri, G., Meiri, H.: Characterization of Sodium Currents in Mammalian Sensory Neurons Cultured in Serum-Free Defined Medium with and without Nerve Growth Factor 13
- Pattus, F., *see* Wilmsen, H.U., et al. 71
- Preston, R.R., Saimi, Y., Amberger, E., Kung, C.: Interactions Between Mutants with Defects in Two Ca²⁺-Dependent K⁺ Currents of *Paramecium tetraurelia* 61
- Preston, R.R., Saimi, Y., Kung, C.: Evidence for Two K⁺ Currents Activated Upon Hyperpolarization of *Paramecium tetraurelia* 41
- Preston, R.R., Wallen-Friedman, M.A., Saimi, Y., Kung, C.: Calmodulin Defects Cause the Loss of Ca²⁺-Dependent K⁺ Currents in Two Pantophobiac Mutants of *Paramecium tetraurelia* 51
- Reggio, H., *see* El Aoumari, A., et al. 229
- Saimi, Y., *see* Preston, R.R., et al. 41, 51, 61
- Sokabe, M., *see* Nomura, K., et al. 241
- Toner, M., Cravalho, E.G., Armant, D.R.: Water Transport and Estimated Transmembrane Potential during Freezing of Mouse Oocytes 261
- Turner, R.J., *see* He, X., et al. 159
- Von Heijne, G.: The Signal Peptide (*topical review*) 195
- Vučelić, D., *see* Andjus, P.R. 123
- Walker, N.A., *see* McCulloch, S.R., et al. 129
- Wallen-Friedman, M.A., *see* Preston, R.R., et al. 51
- Watanabe, K., *see* Nomura, K., et al. 241
- White, M.M., *see* Buller, A.L. 179
- White, S.H., Jacobs, R.E.: Observations Concerning Topology and Locations of Helix Ends of Membrane Proteins of Known Structure 145
- Williams, A.J., Holmberg, S.R.M.: Sulmazole (AR-L 115BS) Activates the Sheep Cardiac Muscle Sarcoplasmic Reticulum Calcium-Release Channel in the Presence and Absence of Calcium 167
- Wilmsen, H.U., Pattus, F., Buckley, J.T.: Aerolysin, a Hemolysin from *Aeromonas hydrophila*, Forms Voltage-Gated Channels in Planar Lipid Bilayers 71
- Wu, X., *see* He, X., et al. 159

Covered in *Current Contents*, *SCI*, *ASCA* and *ISI BIOMED*

Instructions to Authors

General

1. Authors should submit **four complete copies** (the original and three copies) to the Editor-in-Chief of **The Journal of Membrane Biology**. The original illustration material (original drawings, etc.) and three sets of copies should be submitted together with the manuscript. It is recommended that the authors suggest four to six names, including addresses and specific fields of interest, of possible referees for their paper.

2. Papers will be published in **English**. Because of the interdisciplinary nature of the journal, authors should strive to **avoid technical jargon** and to define specialized terminology.

3. Papers which are ready to go to the printers can be published within a **short period**.

Preparation of Manuscripts

4. Papers should be **typewritten**, double-spaced on one side of letter size paper preferably not larger than $8\frac{1}{2}'' \times 11\frac{3}{4}''$ and with a margin 2'' wide on the left. All pages should be numbered serially. References, Tables, footnotes and legends for illustrations should be typed (double-spaced) on separate pages. Manuscripts typed with a dot-matrix printer are not acceptable.

5. The **first page** should contain:

- a) the title
- b) the name(s) of the author(s)
- c) the name of the laboratory where the work was carried out
- d) a running title of not more than 40 characters including spaces
- e) footnotes to the title.

6. Papers should be preceded by a **summary** of not more than 225 words. The summary should be intelligible to the general reader without reference to the text. Abbreviations should be avoided in the summary.

7. The summary should be followed by about 6 **key words** that will identify the subjects under which the article can be indexed.

8. The **bibliography** must refer only to work cited in the text. References must be listed alphabetically at the end of the paper including full titles and with abbreviations according to the Bibliographic Guide for Editors & Authors.

Eigen, G.S. 1960. The kinetics of cation transport. *Proc. R. Soc. London* **138**:182-191

Gibbs, T., Charles, R.T. 1961. Enzymes in membranes. In: *The Molecular Structure of Membranes*. B.A. Selkirk, editor. pp. 53-60. Springer-Verlag, New York

Inclusive pagination, stating first and last page numbers of articles, must be used.

Citations in the text should be given in parentheses; e.g., (Huntley & Briarly, 1967), or (Carson, 1940; Hopkins, 1943), except when the author's name is part of a sentence; e.g., "Harding (1968) reported that . . .". When a paper with three authors is cited, all authors are named in the first citation, but subsequently only the first author is named; e.g., (Miller et al., 1963). When a paper with *more* than three authors is cited, only the first author is named; e.g., (Smith et al., 1987). Another form of citation uses numbers in square brackets referring to an alphabetically ordered bibliography list. Either form is acceptable when used consistently throughout the paper.

9. **Footnotes** should be kept to a minimum and numbered consecutively throughout the paper. Footnotes to the title or authors of

the article are to be marked by asterisks and to be placed on the title page. Footnotes to formulae are to be marked by asterisks, too.

10. **Figures** must be separated from the text and numbered. Original drawings and graphs should be made in India ink on white bristol board. Clean glossy prints of these, shot in sharp focus to final size (50%) are preferred. Figures should be prepared to fit one column (8.1 cm) or, on rare occasions, two columns (16.9 cm), after a reduction to 50%. Lettering, thickness of lines, size of inscriptions, size of measuring points, adequate spacing of shaded and dotted areas should be large enough so as to be legible after reduction. Final size of letters should be: 2 mm for capital letters and numbers; 1.6 mm for lower case letters. If the size of the lettering is inadequate for reduction to 50%, figures will be returned to the authors, causing considerable delay.

The publisher reserves the right to reduce or enlarge illustrations.

Illustrations requiring reproduction as half-tone plates should be kept to a minimum. Photographs should be clean glossy prints in sharp focus and as rich in contrast as possible. They should be trimmed at precise right angles. Scales should be given.

11. Typewritten **mathematical equations** should be styled so as to avoid misinterpretation by the printer.

All letters contained in formulae as well as single letters in the text are automatically set in italics and therefore require no underlining. Hence, abbreviations that appear in formulae and are to be set in Roman type (the type normally used for the text) should be specially marked by underlining in yellow, if possible.

It will be helpful to the printer if **Greek characters are underlined in red and Script in green**. Small letters should then be underlined once and capital letters twice; this applies also to Latin letters in formulae (in pencil). Boldface type (heavy type) should be marked by wavy underlining.

Subscripts and superscripts should be clarified by caret and inverted caret marking 1_1 , 1_2 ; a subscript to a subscript, by 1_{22} .

Obscure primes and dots must be called to the attention of the printer. Mark very clearly: number 1 and letter *l*; zero and letter, *O*, *o*; *e* and *c*; *e* and *l*; *n*, *u* and *v*; primes and apostrophes. Use fractional exponents instead of root signs and the solidus (/) for fractions wherever their use will save vertical space, exp () notation when the exponent is complicated.

All equations must be numbered sequentially in arabic numerals in parentheses on the right hand side of the page.

12. **Symbols and abbreviations** for units of measurements should follow the CBE Style Manual (5th ed. rev.) (Council of Biology Editors, Inc., 9650 Rockville Pike, Bethesda, MD 20814).

Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; that the manuscript will not be published elsewhere in any language without the consent of the copyright holders; that written permission of the copyright holder is obtained by the authors for material used from other copyrighted sources; and that any costs associated with obtaining this permission are the authors' responsibility.